

WHAT IS CLAIMED IS:

1. A method of reducing or inhibiting graft vs. host disease in a bone marrow transfer in a mammal, comprising administering to said mammal an effective amount of interleukin-10.
2. A method of inhibiting, by an immune system, an antigen-specific response to subsequent presentation of said antigen, comprising administering to said immune system an effective amount of exogenous interleukin-10 and said antigen.
3. The method of Claim 2:
 - a) wherein said immune response is mediated by a macrophage, APC, langerhans cell, or dendritic cell;
 - b) further inhibiting proliferative response of CD4⁺ host-reactive T cell clones; or
 - c) wherein said inhibiting persists for at least about 21 days.
4. The method of Claim 2, wherein said effective amount is sufficient to decrease responder T cell activation.
5. The method of Claim 4, further comprising reduced stimulatory capacity of peripheral blood mononuclear cells, dendritic cells, monocytes, and/or normal B cells.
6. A substantially pure antigen-specific anergic T cell characterized by production upon restimulation of:
 - a) low IL-2;
 - b) low IL-4;
 - c) low IL-5;
 - d) intermediate IFN- γ ;
 - e) low GM-CSF; and
 - f) high IL-10;said population made by administering to precursors of said T cell with a combination of:

- i) exogenous IL-10; and
- ii) antigen.

7. The anergic T cells of Claim 6:

- a) wherein said precursors are CD4⁺ T cells;
- b) which further produce high TNF- α ;
- c) which induce an anergic response to said antigen;
- d) wherein said IL-10 is human IL-10;
- e) wherein said IL-10 is administered for at least about 7 days; or
- f) wherein said anergic condition persists for at least about 21 days.

8. The population of Claim 6, wherein said antigen is selected from:

- a) a protein antigen;
- b) a particulate antigen;
- c) an alloantigen; or
- d) an autoantigen.

9. The population of Claim 8, wherein said antigen is selected from:

- a) an alloantigen; or
- b) an autoantigen.

10. A substantially pure antigen-specific anergic T cell characterized by production upon restimulation of:

- a) low IL-2;
- b) low IL-5;
- c) intermediate IFN- γ ;
- d) low GM-CSF; and
- e) high IL-10.

11. The anergic T cell of Claim 10, wherein said production of:

- a) IL-2 is less than about 500 pg/ml;
- b) IL-5 is between about 300 and 3000 pg/ml;

- c) IFN- γ is at least about 1000 pg/ml;
- d) GM-CSF is about 300-3000 pg/ml; and
- e) IL-10 is at least about 3000 pg/ml.

5 12. The anergic T cell of Claim 11, wherein said IL-10 level upon restimulation is at least about 5x that of a Th1 cell.

13. A substantially pure T cell which exhibits an antigen-specific anergy to an antigen.

10

14. The T cell of Claim 13:

- a) wherein said antigen is an alloantigen or self antigen;
- b) which produces IL-10 upon restimulation at least about 3000 pg/ml; or
- 15 c) which exhibits said antigen-specific anergy for at least about 21 days.

15

20

15. A method of suppressing a response in a T cell to an antigen, comprising administering to an immune system comprising said cell a combination of:

- a) exogenous IL-10; and
- b) either antigen or anti-CD3 antibodies.

25

16. The method of Claim 15, wherein said antigen is alloantigen or self antigen.

17. The method of Claim 16, wherein said antigen is restricted by MHC molecules.

30

18. The method of Claim 15, performed in vivo.

19. The method of Claim 15, which further suppresses response to subsequent stimulation.

35

20. The method of Claim 19, wherein said response accompanies tissue transplantation.

21. The method of Claim 20, wherein said tissue is an organ or bone marrow.

5 22. The method of Claim 20, wherein said T cell is from the recipient of said tissue transplantation.

23. The method of Claim 15, wherein said response accompanies tissue transplantation and:

- 10 a) said administering is prior to said tissue transplantation;
 b) said T cell is introduced to the recipient of said tissue transplantation; or
 c) IL-10 is administered to the tissue to be transplanted before said transplantation.

15

24. The method of Claim 16, wherein said antigen causes an autoimmune disease.

25. A method of suppressing a subsequent response in a T cell to an antigen, comprising administering to an immune system comprising said cell with a combination of:

- 20 a) exogenous IL-10; and
 b) either antigen or anti-CD3 antibodies.

25 26. The method of Claim 25, wherein said IL-10 is administered for at least about 7 days.

27. A method of inducing in a T cell anergy to an MHC antigen, comprising administering to a precursor to said T cell:

- 30 a) exogenous IL-10 and said antigen; or
 b) exogenous IL-10 with anti-CD3.

28. The method of Claim 27, wherein said administering with IL-10 is for at least about 7 days.

35

29. A composition comprising IL-10 and antigen.

30. The composition of Claim 29, wherein:

a) said composition is a pharmaceutical composition comprising
said IL-10 and a pharmaceutically acceptable carrier;

5 b) said IL-10 is human IL-10; or

c) said antigen is selected from the group consisting of:

i) alloantigen;

ii) self antigen;

iii) protein antigen; and

10 iv) particulate antigen.